

REMARKS/ARGUMENTS

1. The Examiner rejected claims 1-6, 15, and 16 under 35 U.S.C. § 102(b) as being anticipated by Schudel (U.S. Patent No. 4,089,587). Claims 7 and 8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Schudel in view of Yamada et al. (U.S. Patent No. 5,148,309). Claims 9-13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Schudel in view of Nezu (U.S. Patent No. 5,456,967). Claims 14 and 17-19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Schudel in view of Nishitani (U.S. Patent No. 5,127,722). Claim 20 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Schudel in view of Nezu and further in view of Yamada et al. ("Yamada"). The Examiner further objected to claim 6 under 37 C.F.R. § 1.75(c) as being of improper dependent form. Finally, the Examiner objected to the drawings under 37 C.F.R. § 1.83(a) as not showing every feature of claims 16 and 19. Reconsideration of this application is respectfully requested in view of the amendments and/or remarks provided below.

Objections to the Drawings

2. The Examiner objected to the drawings under 37 C.F.R. § 1.83(a) as not showing every feature of claims 16 and 19. In particular, the Examiner stated that Applicant must show "a directivity along a vertical axis relative to a normal line passing perpendicularly through a center of the projection screen is the same as a directivity along a horizontal axis relative to said normal line" or cancel the feature from the claims. Applicant respectfully disagrees with the Examiner's requirement.

37 C.F.R. § 1.81 states that an applicant is required to furnish a drawing where necessary for the understanding of the subject matter sought to be patented. Clearly, if a drawing is not necessary to understand the subject matter sought to be patented, such as is often the case with method and chemical patents, no drawing need be provided. 37 C.F.R. § 1.83(a) requires only that the drawing, when provided, show every feature of the invention specified in the claims. However, this requirement does not equate to showing every word recited in the claims.

Applicant's drawings clearly show all the structural elements recited in the claims. However, Applicant's drawings do not show, nor are they required to show, inherent

characteristics of the recited arrangement of elements. Directivity is characteristic of a light source, such as a projection screen. Depending on the configuration of the source, light emanating therefrom will have a particular directivity in a particular direction from the source. Directivity cannot be shown, but rather is a result of the configuration of the source. Thus, the Examiner's request that Applicant show "directivity" or cancel it from dependent claims 16 and 19 is improper. Depictions of the recited "vertical axis relative to a normal line passing perpendicularly through a center of the projection screen" and the recited "horizontal axis relative to said normal line" are much easier to provide, but are still unnecessary for an understanding of the subject matter sought to be patented. Those of ordinary skill in the art clearly understand the concepts of axes relative to a normal line passing perpendicularly through a center of the projection screen without requiring such axes and normal line to be depicted in the drawing. Moreover, neither the axes nor the normal line is a feature of the claimed invention; therefore, they need not be shown pursuant to 37 C.F.R. § 1.83(a). As a result, the Examiner's requirement that the recitations of claims 16 and 19 be shown in the drawings or cancelled is improper.

Nevertheless, for reasons unrelated to patentability or the Examiner's requirement, Applicant has removed the concepts of directivity from claims 16 and 19 in favor of subject matter related to reflectivities of the two surfaces of the reflective layer. Similar to directivity, reflectivity is a characteristic of an object and not the proper subject matter for depiction in a drawing. Accordingly, Applicant requests that the Examiner withdraw the objection to the drawings.

Objections to the Claims

3. The Examiner objected to claim 6 under 37 C.F.R. § 1.75(c) as being of improper dependent form. In particular, the Examiner indicated that claim 6 improperly depends from itself. Applicant has amended claim 6 to correct its dependency. As a result of such amendment, claim 6 now properly depends upon claim 5. Accordingly, Applicant requests that the Examiner withdraw the objection to claim 6.

Rejections under 35 U.S.C. § 102(b)

4. Claims 1-6, 15, and 16 were rejected under 35 U.S.C. § 102(b) as being anticipated by Schudel. Applicant has herein amended claim 1 to more clearly distinguish the recitations of such claim over the disclosure of Schudel. In particular, Applicant has incorporated the limitations of claim 4 into claim 1. In other words, Applicant has amended the reflective layer of claim 1 to require that the surface of the reflective layer that is attached to the diffusion layer have a lower reflectivity than the surface of the reflective layer that is attached to the substrate. For example, as recited in amended claims 3 and 4, when the reflective layer comprises an aluminum foil, the surface of the reflective layer attached to the substrate has a polished surface; whereas, the surface of the reflective layer attached to the diffusion layer is not polished (e.g., has a matte surface). Schudel provides no comparable disclosure or suggestion. In fact, as discussed below, Schudel actually teaches away from the claimed invention by disclosing the effective integration of the characteristics of a diffusion layer (layer 18 and 18' in FIGs. 2, 2A, 3A, and 3B) into the reflective layer itself, thereby eliminating the diffusion layer altogether in the embodiment in which the outward surface of Schudel's reflective layer has a combined striated and matte finish (see, e.g., FIGs. 4A-4D and 5; col. 6, lines 24-60).

Schudel discloses several embodiments for a projection screen, some of which include outer diffusion layers (e.g., those in FIGs. 2, 2A, 3A and 3B) and others that do not and, by Schudel's own admission, should not (e.g., those in FIGs. 4A-D, 5, 6 and 7A-D). In the embodiments disclosed in FIGs. 2, 2A, 3A and 3B (collectively referred to in Schudel as the "first embodiment" or variations thereof), the projection screen includes a substrate (16, 16'), a reflective layer (20, 20') attached to the substrate, and a diffusion layer (18, 18') attached to the reflective layer. The diffusion layer in at least the embodiment disclosed in FIG. 2 includes an outer matte finish (see col. 4, lines 25-27). Schudel is silent in these embodiments as to whether there is any difference in reflectivity of the two surfaces of the reflective layer (20, 20'). The forward surface of the reflective layer (20) of the embodiment disclosed in FIG. 3 includes the striations (24) present on the back surface of the diffusion layer (18), but Schudel does not disclose whether the striated surface of the reflective layer is polished or not. However, Schudel does clearly disclose fabrication of his reflective layer through the use of metallization, as

opposed to, for example, lamination (see col. 4, lines 22-32). Since metallization results in similar reflectivity on both surfaces of the metallized layer, Schudel at least suggests that both sides of his reflective layer have similar reflectivity characteristics. Schudel does state that the exposed surface of the diffusion layer (18) should include a matte finish when the embodiment of FIG. 3B is used (see col. 4, lines 56-68).

In the embodiments disclosed in FIGs. 4A-D, 5, 6, and 7A-D (collectively referred to in Schudel as the “second embodiment” or variations thereof), the projection screen includes only a substrate (30, 42 or 46) and a reflective layer (36, 36’ or 50), but does not include a diffusion layer (see col. 6, lines 24-28). The reflective layer may be covered with a protective coating, such as a lacquer, but no diffusion properties are provided by such coating (see col. 6, lines 28-31). Moreover, Schudel teaches away from including an additional diffusion layer in the “second embodiment” by stating that “[i]t is immediately apparent that in the second embodiment of the present invention, as in the compression roll screens discussed hereinabove, the reflective surface itself is exposed The texture of the reflective layer is caused by the underlying film [substrate], which has the same texture as the reflective layer.” Thus, in Schudel’s second embodiment, the reflective layer itself allegedly includes sufficient diffusion properties, such that a separate diffusion layer is not necessary.

In the Office Action, the Examiner refers to claim 29 of Schudel (col. 10, lines 15-18) to reject Applicant’s claim 4, the essence of which has now been incorporated into Applicant’s claim 1. However, claim 29 of Schudel is directed to the process of forming the variation of Schudel’s “second embodiment” as depicted in FIG. 5. Thus, the projection screen formed by the process of Schudel’s claim 29 does not include an outer diffusion layer as recited in Applicant’s claim 1. Rather, what might be considered the equivalent of Applicant’s claimed diffusion layer is removed from Schudel’s projection screen in the last step of Schudel’s claim 29 as depicted in FIG. 5 and described in column 6, lines 56-61. Removal of the “first support medium” leaves the reflective layer exposed as discussed above (see col. 6, lines 24-50).

In further contrast to the recitations of Applicant’s claim 1, the “high gain reflective surface” recited in Schudel’s claim 29 actually becomes the outer or exposed surface of the reflective layer upon completion of the fabrication process recited in the claim (i.e., the high gain reflective surface is deposited on the surface of the first support medium, which support medium

is then removed to expose the high gain reflective surface after the back side of the reflective layer is bonded to the second support medium), as opposed to the inner surface of the reflective layer that is attached to the substrate. As a result, claim 1, as amended, is not taught or suggested by Schudel.

Therefore, as detailed above, none of the embodiments or variations thereof disclosed in Schudel include or suggest all of the limitations present in Applicant's amended claim 1. Accordingly, Applicant respectfully requests that claim 1, as amended, be passed to allowance.

Claims 2-6, 15, and 16 are dependent upon claim 1, which claim has been shown allowable above. Therefore, since claims 2-6, 15, and 16 each introduce additional subject matter that, when considered in the context of the recitations of claim 1, constitutes patentable subject matter, Applicant respectfully submits that the recitations of claims 2-6, 15, and 16 are not disclosed or suggested by Schudel. Accordingly, Applicant respectfully submits that claims 2-6, 15, and 16 are in proper condition for allowance.

Rejections under 35 U.S.C. § 103(a)

5. Claims 7 and 8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Schudel in view of Yamada. Claims 7 and 8 are dependent upon claim 1, which claim has been shown allowable above. Therefore, since claims 7 and 8 introduce additional subject matter that, when considered in the context of the recitations of claim 1, constitutes patentable subject matter, Applicant respectfully submits that the recitations of claims 7 and 8 are not disclosed or suggested by the cited references. Accordingly, Applicant respectfully submits that claims 7 and 8 are in proper condition for allowance.

6. Claims 9-13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Schudel in view of Nezu. Claims 9-13 are dependent upon claim 1, which claim has been shown allowable above. Therefore, since claims 9-13 introduce additional subject matter that, when considered in the context of the recitations of claim 1, constitutes patentable subject matter, Applicant respectfully submits that the recitations of claims 9-13 are not disclosed or suggested by the cited references. Accordingly, Applicant respectfully submits that claims 9-13 are in proper condition for allowance.

7. Claims 14 and 17-19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Schudel in view of Nishitani. Regarding claim 14, such claim is dependent upon claim 1, which claim has been shown allowable above. Therefore, since claim 14 introduces additional subject matter that, when considered in the context of the recitations of claim 1, constitutes patentable subject matter, Applicant respectfully submits that the recitations of claim 14 are not disclosed or suggested by the cited references. Accordingly, Applicant respectfully submits that claim 14 is in proper condition for allowance.

Regarding claim 17, the Examiner relies upon Schudel in essentially the same manner as Schudel was relied upon with respect to the rejection of claim 1. The Examiner relies upon Nishitani solely to disclose use of a roller upon which the projection screen may be wound during periods of non-use. Applicant has amended claim 17 in a manner similar to the amendments made to claim 1. As a result, Applicant's arguments in Section 4 above distinguishing amended claim 1 from the disclosure and suggestion of Schudel are equally applicable in distinguishing the recitations of amended claim 17 from the disclosure and suggestion of Schudel. As a result, Applicant submits that neither Schudel nor Nishitani, whether taken individually or in combination, disclose or suggest the recitations of claim 17, as amended, and respectfully requests that claim 17, as amended, be passed to allowance.

Regarding claims 18 and 19, such claims are dependent upon claim 17, which claim has been shown allowable above. Therefore, since claims 18 and 19 introduce additional subject matter that, when considered in the context of the recitations of claim 17, constitutes patentable subject matter, Applicant respectfully submits that the recitations of claims 18 and 19 are not disclosed or suggested by the cited references. Accordingly, Applicant respectfully submits that claims 18 and 19 are in proper condition for allowance.

8. Claim 20 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Schudel in view of Nezu and further in view of Yamada. In particular, the Examiner relies upon Schudel in essentially the same manner as Schudel was relied upon with respect to the rejection of claim 1. The Examiner relies upon Nezu solely to disclose a projection screen having a substrate with a thickness in the range of 5 mils to 8 mils, a reflective layer with a thickness in

the range of 1/3 of a mil to 1 mil, and a diffusion layer with a thickness in the range of 2 mils to 8 mils. The Examiner relies upon Yamada solely to disclose a projection screen with an adhesive between a reflective layer and a diffusion layer. The Examiner then concludes that it would have been obvious to one of ordinary skill in the art to combine the disclosures of Schudel, Nezu and Yamada to arrive at the projection screen recited in claim 20. Applicant disagrees with the Examiner's characterization of the claimed invention in view of the cited references because, among other things, none of the references disclose or suggest the use of an adhesive between the substrate and the reflective layer. Rather, all three cited references disclose depositing the reflective layer on the substrate, as opposed to using any form of adhesive.

Notwithstanding the failure of the cited references to disclose or suggest all the limitations originally recited in Applicant's claim 20, Applicant has herein amended claim 20 in a manner similar to the amendments made to independent claims 1 and 17 in an effort to move prosecution forward and obtain prompt allowance of the present application. Since the references, when taken together, fail to disclose or suggest all the limitations in Applicant's original claim 20, Applicant's amendments to claim 20 as presented herein were not made for any reasons related to patentability. Applicant's arguments in Section 4 above distinguishing amended claim 1 from the disclosure and suggestion of Schudel are equally applicable in further distinguishing the recitations of amended claim 20 from the disclosure and suggestion of Schudel. As a result, Applicant submits that none of the cited references, whether taken individually or in combination, disclose or suggest the recitations of claim 20, both originally and as amended, and respectfully requests that claim 20 be passed to allowance.

Other Amendments to the Claims

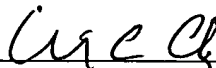
9. Applicant has herein amended several of the claims to correct minor informalities therein, to broaden the claims in certain respects, and to make the text of dependent claims consistent with the amendments made to their respective base claims. Some of the dependent claims were also amended to recite disclosed, but previously unclaimed, subject matter. None of these amendments were intended to narrow the claims in any manner or were made for any purpose related to patentability. Applicant submits that all such claim amendments are fully supported by Applicant's originally filed specification.

New Claims

10. Applicant has herein added new claims 21-43 directed to additional features of the present invention. Applicant submits that such claims are fully supported by Applicant's originally filed specification and are patentably distinct from the prior art of record. Accordingly, Applicant requests that the Examiner pass new claims 21-43 to allowance. With the addition of claims 21-43, forty-three claims remain pending in the present application, five of which are independent. Applicant had previously paid for examination of twenty claims, three of which were independent. Therefore, Applicant has added twenty-three extra claims, two of which are independent. As a result, an additional fee of \$775.00 is due pursuant to 37 C.F.R. § 1.16(i) for examination of the twenty-three extra claims. A check for such additional filing fee is enclosed herewith.

11. The Examiner is invited to contact the undersigned by telephone, facsimile or email if the Examiner believes that such a communication would advance the prosecution of the instant application. Please charge any necessary fees associated herewith, including extension of time fees (if applicable and not paid by separate check), to the undersigned's Deposit Account No. 50-1111.

Respectfully submitted,

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